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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,979	04/13/2004	Charles H. Cunningham	STFUP155/S03-185	5327
22434	7590	05/16/2005	EXAMINER	
BEYER WEAVER & THOMAS LLP			VARGAS, DIXOMARA	
P.O. BOX 70250			ART UNIT	
OAKLAND, CA 94612-0250			PAPER NUMBER	

2859

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/823,979

Applicant(s)

CUNNINGHAM ET AL.

Examiner

Dixomara Vargas

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mw

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 09/10/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 09/10/04 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. The non-patent document «Parameter Relations for Shinnar-Le Roux Selective Excitation Pulse Design Algorithm» has not been considered since the document is incomplete.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(f) he did not himself invent the subject matter sought to be patented.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1-15 are rejected under 35 U.S.C. 102(f) because the applicant did not invent the claimed subject matter.

The article “Designed of Symmetric-Sweep Spectral-Spatial RF Pulses for Spectral Editing” published by journal: Magnetic Resonance in Medicine; 52; 147-153 (2004) and article “Designed of Symmetric-Sweep Spectral-Spatial RF Pulses for Spectral Editing” from the Department of Electrical Engineering, Stanford University (2003), provided by applicant,

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discloses the claimed invention; was published by the applicants of the current application and in addition, includes additional inventive entities, for example, Albert P. Chen, Duan Xu, Ralph E. Hurd and Napapon Sailasuta. If said entities are not conjunct inventors of the current application, in order to clarify the issues about the inventorship it is necessary to provide a satisfactory showing by way of affidavit under 37 CFR 1.132 that the inventorship of the application is correct in that the reference discloses subject matter invented by the applicant rather than derived from the author or patentee notwithstanding the authorship of the article or the inventorship of the patent. In re Katz, 687 F.2d 450, 455, 215 USPQ 14, 18 (CCPA 1982) (inquiry is appropriate to clarify any ambiguity created by an article regarding inventorship, and it is then incumbent upon the applicant to provide "a satisfactory showing that would lead to a reasonable conclusion that [applicant] is the...inventor" of the subject matter disclosed in the article and claimed in the application). See MPEP 2137. For the reasons stated above, a 35 U.S.C. 102(a) rejection follows.

4. Claims 1-15 are rejected under 35 U.S.C. 102(a) as being anticipated by Hurd et al. ("Designed of Symmetric-Sweep Spectral-Spatial RF Pulses for Spectral Editing" from the Department of Electrical Engineering, Stanford University (2003), provided by applicant).

5. With respect to claim 1, Hurd discloses a method for designing symmetric-sweep spectral-spatial RF pulses comprising the steps of:

- a) specifying a pulse duration and gradient oscillation frequency for the RF pulse (Page 4, Lines 5-9);
- b) designing a beta-polynomial for a spectral dimension of the RF pulse (Page 4, Lines 7-18),

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c) altering polynomial roots of the spectral linear-phase beta-polynomial as plotted in the complex plane (Pages 4-5, Lines 19-23 and 1-5),

d) computing a non-linear phase beta-polynomial using the altered roots (Pages 4-5, Lines 19-23 and 1-5), and

e) computing a symmetric sweep beta-polynomial RF pulse from the non-linear phase beta-polynomial (Pages 4-6, Lines 19-23 to 1-6 consecutively).

6. With respect to claim 2, Hurd discloses the step of determining the number of sub-lobes, the number of beta-polynomial coefficients for the spectral dimension (N), and a time-bandwidth product for the spectral dimension (TB) based on spectral bandwidth and pulse duration (Page 4, Lines 5-9).

7. With respect to claim 3, Hurd discloses the step of using number of coefficients, time-bandwidth product (TB), and weighting factors for in-band and out-of-band ripple optimization (Page 4, Lines 10-18).

8. With respect to claim 4, Hurd discloses the step of using a Parks-McClellan digital filter design algorithm (Page 4, Lines 10-11).

9. With respect to claim 5, Hurd discloses the step of flipping approximately half of the roots of the passband inside the unit circle and flips the other half of the roots of the passband outside of the unit circle (Page 4, Lines 19-23).

10. With respect to claim 6, Hurd discloses the step wherein the roots are altered such that one-half of the passband contains roots inside the unit circle, and the other half of the passband contains roots outside the unit circle (Page 4, Lines 19-23).

11. With respect to claim 7, Hurd discloses the step of t) repeating steps b) - e) after altering weighting factors in step b) to improve pulse performance (Pages 5-6, Lines 12-21 and 1-6 respectively).
12. With respect to claim 8, Hurd discloses the step of repeating steps b) - e) after changing the root pattern of the spectral beta-polynomial in step c) to improve pulse performance (Pages 5-6, Lines 12-21 and 1-6 respectively).
13. With respect to claim 9, Hurd discloses the step of repeating steps b) - e) after altering pulse duration or gradient oscillation frequency in step a) to improve pulse performance (Pages 5-6, Lines 12-21 and 1-6 respectively).
14. With respect to claims 10 and 13, Hurd discloses the step wherein the RF pulse is designed for use in magnetic resonance spectroscopic imaging (Abstract).
15. With respect to claims 11 and 14, Hurd discloses the step wherein the RF pulse is designed for use in spatially resolved measurement of metabolite levels (Abstract).
16. With respect to claims 12 and 15, Hurd discloses the step wherein the metabolite is lactate (Abstract).

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional prior art cited in the PTO 892 discloses methods for handling beta-polynomials.

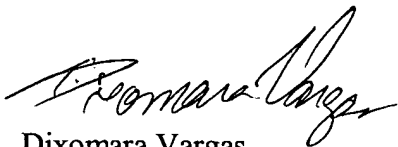
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dixomara Vargas whose telephone number is (571) 272-2252.

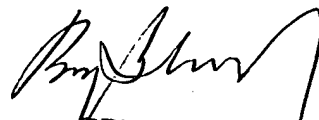
The examiner can normally be reached on Monday to Thursday from 8:00 am. to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Dixomara Vargas
Art Unit 2859
May 11, 2005


BRIJ SHRIVASTAVA
PRIMARY EXAMINER